Trucks Promote the Fight Against FOG and Nondispersible Items

In its ongoing effort to educate customers and citizens about the importance of keeping fats, oils, and grease (FOG) and nondispersible items out of its sewer system, the Macon Water Authority (MWA), based in Macon, Ga., is taking its message to the streets.

The MWA has created displays for two of its combination vacuum and jet trucks, with one promoting the Fight Against FOG and the other reminding customers that the Toilet Is Not a Trash Can. The newly decorated MWA trucks made their debut on Macon's streets in early March to spread the word that the MWA needs the public's help in preventing sewer spills and overflows caused by FOG as well as nondispersible items. By keeping FOG out of kitchen sinks nondispersible items out of toilets, local residents can help prevent those sewer line blockages. Through this concerted effort, the community will benefit from a reduction in potentially harmful sewer spills and overflows, which can cause public health concerns and threats to water quality in the natural resources used for drinking water production and outdoor recreation.

This display on one of Macon Water Authority's trucks reminds customers to help keep fats, oils, and grease out of the city's sewer system.

Nondispersibles include items such as rags, wet wipes, facial tissues, cotton swabs, dental floss, feminine hygiene products, cat litter, or other forms of solid waste. In addition to clogging MWA sewer lines and damaging the MWA's wastewater treatment facilities and customers' plumbing, nondispersible items and FOG cause well over half of all sewer spills and overflows.

MWA uses the combination vacuum and jet trucks to clean debris and release blockages from the utility's sewer lines. Since these trucks are in the field addressing the consequences of FOG and nondispersibles that have caused sewer line clogs, they are appropriate vehicles for displaying these key preventive maintenance messages.

San José Volunteers Remove "Legacy Trash" From Drought-Affected Creeks

With very low water levels in creeks resulting from the prolonged drought in California, volunteers in San José have been able to reach trash in local creek beds that had been inaccessible for years. Along with volunteer-organized litter cleanups, San José conducts annual cleanup and litter sorting activities at 32 creek "hot spot" locations. Last year the city increased trash collection from litter hot spots by 73% compared with 2014. Much of this increase is due to "legacy trash" that has been accumulating for decades in creek beds. Legacy trash included computer monitors from the 1980s, floppy discs, radios with cassette tape decks, old toys, and typewriters.

More than 6,100 volunteers participating at 109 cleanup events collected 626 tons of litter from streets and creeks in 2015. That's equivalent to the volume of about 42 semi-trucks.

San José has partnered with community groups and volunteers to conduct litter cleanups with a focus on local creeks. Cleanups are organized by the San José Anti-Litter Program, Downtown Streets Team, Creek Connections Action Group, Keep Coyote Creek Beautiful, and Friends of Los Gatos Creek. Community groups receive funding from the San José Environmental Services Department, San José Housing Department, the US Environmental Protection Agency, and Santa Clara Valley Water District.

The State Water Resources Control Board in 2009 required all Bay Area cities and stormwater agencies to develop plans to reduce litter from storm sewer systems by 40% by 2014, 70% by 2017, and 100% by 2022. Currently San José is on target to meet the 70% goal by July 1, 2017.

Laser Reveals Movement of Water Through Soil

Soil scientist Daniel Hirmas, a professor at University of Kansas (Lawrence), and his team are studying soil hydrology with the possibility of improving management of water resources in agriculture. Hirmas has been researching the ease of water movement, or hydraulic conductivity, through soil. This happens in larger empty spaces, or macropores, that help move water through the soil.

Soil pore size is important to conductivity; a soil pore that is twice as large as another will conduct 16 times the volume of water compared with the smaller pore in the same amount of time. This movement is called preferential flow.

Hirmas has been using a multistripe laser triangulation (MLT) scanner to conduct his research. The MLT scanner was originally developed for engineering purposes, and Hirmas adapted its use to study soil pores and preferential flow. To determine whether the MLT scanner could be used to predict preferential flow, Hirmas designed a study. The research group took saturated soil and allowed blue dye to flow through the sample. An easily identifiable visible pattern developed. The areas of the soil that turned blue showed larger pores. These pores allowed the dyed water to pass through—a preferential flow pattern. When the same soil sample was scanned using MLT, the pattern from the laser significantly matched that of the dye pattern. Using math to account for the difference between the two states of the soil, Hirmas was able to make predictions about water movement.

Daniel Hirmas uses a multistripe laser triangulation scanner at night in a soil pit to determine the soil's hydraulic conductivity. *Photograph provided by D. Hirmas.*

Hirmas' work was recently published in *Vadose Zone Journal*. The research is the product of teams from University of Kansas and Rutgers University (New Brunswick, N.J.).

Survey Shows Californians' Support for Recycled Water

According to a statewide survey conducted by Xylem, California residents are overwhelmingly in support of using treated wastewater, or recycled water, in their everyday lives. The survey polled 3,000 randomly selected California voters and found that 76% of respondents believe recycled water should be used as a long-term solution for managing water resources, regardless of whether a water shortage continues.

The survey defined recycled water as former wastewater that has been treated and purified so that it can be reused for drinking purposes. Nearly half (49%) of respondents are very supportive of using recycled water as an additional local water supply and another 38% are somewhat supportive. Of survey respondents, 42% are very willing to use recycled water in their everyday lives and an additional 41% are somewhat willing. These findings confirm that a significant number of Californians support the use of recycled water.

According to the findings, 89% of residents are more willing to use recycled water after reading an educational statement explaining the treatment processes that recycled wastewater undergoes to become safe and drinkable again. Further, 88% agree that seeing a demonstration of the water purification process would make them more comfortable using and drinking recycled water. These findings suggest that education is a key component in gaining even stronger support for recycled water across the state.

Californians do not view the use of recycled water as a short-term fix to the state's five-year drought. Eighty-eight percent of California residents agree that even if El Niño brings increased rainfall to California, the state should continue to invest in the use of recycled water for drinking purposes. In fact, if El Niño brings the expected rainfall to California, only 12% of respondents say it would cause them to be less concerned about saving water.

BUSINESS BRIEFS

Veolia completed contract renewals with four key clients in the Pacific Northwest. Cascade Water Alliance in Bellevue, Wash.; the City of Cle Elum, Wash.; the National Parks Service; and the City of Great Falls, Mont., extended existing agreements with Veolia North America. The renewals span from a period of one year up to 10 years.

In other company news, the Atlanta-Fulton County Water Resources Commission (AFCWRC) has renewed its partnership with Veolia to continue operating, maintaining, and managing AFCWRC drinking water treatment facilities. The AFCWRC will continue to own all drinking water assets and maintain rate-setting authority.

Neptune Technology Group Inc. announced that the City of Toronto launched MyWaterToronto, an online tool based on Neptune's N_SIGHT™ IQ Intelligent Data and Analytics platform and using Neptune's Connected Utility Partnership Program™ interfaces. It enables customers to view their water use information from their computer or mobile device.

Chemviron Carbon, the European operating group of Calgon Carbon Corp., celebrates the opening of its new reactivation plant in Tipton, U.K. The plant, which is dedicated to the reactivation of spent carbon used in drinking water and food-grade applications, underwent an upgrade to increase its capacity and efficiency from 5,800 to 10,000 tons/year of reactivated carbon.

Wright-Pierce provided the design and construction administration engineering for the Mattabassett Water Pollution Control Facility upgrade project in Cromwell, Conn., which won the American Council of Engineering Companies of Connecticut Grand Award. The Mattabassett project was recognized for contributing to the cleanup of Long Island Sound by reducing the facility's nitrogen levels to below state and federal compliance mandates while increasing treatment capacity with energy-efficient design components.

The *Environmental Business Journal* and the *Climate Change Business Journal* recognized **CH2M** for outstanding business performance in the environmental and climate change industries with their Business Achievement Awards. CH2M was chosen for a combined four awards in 2015 and was mentioned for contributions to two more.

A new product called **Constant Water** (developed by a company by the same name) serves as an emergency supply system for water well users during a power outage, well-pump failure, or during a water main break. It is an automatic backup system that provides 40–120 gal of freshwater.

Hydro International has acquired Hydro-Logic Ltd. and Hydro-Logic Services LLP, expanding its range of water quantity and water quality management products with the addition of monitoring products and data, analysis, and advisory services.

FluksAqua, a free, moderated, online forum designed for operators of drinking water distribution, water, and wastewater treatment plants, answers peer-to-peer technical questions from water professionals. The online community was created by water and wastewater professionals to facilitate a flow of information between operators and professionals on issues of water safety, infrastructure, conservation and operational improvements. It can be accessed at www.fluksaqua.com/en/qa/.

Zurn Industries LLC donated $26,620 in 2015 to nonprofits, the largest portion of that coming from associates ($10,570). Zurn contributed $6,050 in corporate sponsorships and another $10,000 came from Rexnord Foundation. Rexnord is the parent company of Zurn.

Four international plumbing and building codes now require that water reuse systems comply with **NSF International's** standard for water reuse systems. NSF International, a global public health organization, developed NSF/ANSI 350: *Onsite Residential and Commercial Water Reuse Treatment* to standardize the material, design, and performance criteria for water reuse systems. The 2015 International Residential Code, International Plumbing Code, Uniform Plumbing Code, and International Green Construction Code now all require that water reuse systems used for residential toilet and urinal flushing comply with the NSF/ANSI 350 standard. The standard requires 26 weeks of continuous testing with regularly scheduled sampling throughout.

In addition, NSF International has developed a test method, NSF Protocol 477: *Drinking Water Treatment Units – Microcystin*, that verifies a water filter's ability to reduce microcystin to below the health advisory levels set by the US Environmental Protection Agency. Water filters certified to NSF Protocol 477 are designed to provide an additional barrier of protection against microcystin and to supplement the treatment of municipal drinking water.

The **F.W. Webb Co.,** founded in 1866 as the second plumbing supply house in Boston, Mass., has formed the F.W. Webb Water Works Division after acquiring Water Works Supply Corp. (WWSC) of Malden, Mass., and Londonderry,

N.H. With the purchase of WWSC, F.W. Webb expands its product line to address below-ground installation, construction, maintenance, and repair of water mains, sewer lines, water processing facilities, waste treatment plants, and pumping stations.

Itron Inc. has completed the modernization of Jerusalem Water Undertaking's (JWU's) water system infrastructure. A nonprofit, independent, civil organization in the Ramallah and Al-Bireh Governorate of Palestine, JWU is using Itron's volumetric water meters to deliver water to residential customers and reduce apparent nonrevenue water losses in its system. In addition, Itron supplied JWU with a high-end cold water test bench for meter verification and professional testing of accuracy.

A new website from **Reliable Equipment Sales** offers access to free guidance on pump sizing, identification, and specification and features a proprietary "What's My Pump?" identifier tool that helps visitors determine the model number of their pumps. Website visitors are also invited to send electronic photos of their pumps and parts for identification. Designed for process engineers, chemical engineers, and water and wastewater treatment operators, the website categorizes available pumps and equipment by chemical, pharmaceutical, food and beverage, plating and metal finishing, and by other industries.

Tualatin Valley Water District's Ridgewood View Park Reservoir and Pump Station in Beaverton, Ore., recently received the Institute for Sustainable Infrastructure's (ISI's) Envision rating system Gold Award. Developed in partnership with Tualatin Hills Park and Recreation District, the Ridgewood View Park project is the first joint water storage reservoir and park facility to receive an ISI Envision award, and is also the first Envision award for Oregon. Project planning started in 2012 with the design firm AECOM, and construction began in 2014.

Engineering Enterprises Inc. (EEI) received a Merit Award from the American Council of Engineering Companies of Illinois for a project that was completed for the Village of Huntley (Ill.). EEI developed a comprehensive water and wastewater systems master plan to expand Huntley's water works and wastewater systems infrastructure.

McMillen Jacobs Associates played a role in the San Francisco Public Utilities Commission New Irvington

Tunnel project in California, which was recently awarded the 2016 Project of the Year Award in the Environment Category for projects over $75 million. McMillen Jacobs Associates was the lead designer for the tunnel, shafts, and portals, and provided engineering services during construction. The project, estimated to cost $250 million, broke ground in fall 2010. The project was completed in November 2015.

H2O Innovation Inc. is expanding its business activities in Mexico through a partnership agreement to use the technologies, experience, and references of the projects completed by H2O Innovation. The new Mexican entity is named H2O Innovación de Mexico S.A. de C.V. (H2O Innovación Mexico). Through a royalty agreement paid to H2O Innovation, this Mexican entity will benefit from the products and technologies offered by H2O Innovation. The operations of H2O Innovación Mexico will be based in a new manufacturing and assembly plant in Monterrey, supported by regional offices in Cancún and Cabo.

In an effort to identify new sustainable water technologies and incorporate them into its global operations, **MGM Resorts International** has partnered with **WaterStart.** In coordination with MGM Resorts, WaterStart will create and maintain an innovations priority list for water-related technologies as well as identify and evaluate the applicability of technologies for use in MGM operations. WaterStart will leverage its local and international network to conduct research and use MGM operations as a test bed for companies working to improve water resource management and sustainability.

Baxter & Woodman Consulting Engineers has opened a new Milwaukee, Wis., office to better serve the needs of the firm's growing client base. The new office is located in the Honey Creek II office complex at 115 S. 84th St., Ste. 175. With the Milwaukee site, Baxter & Woodman now operates three office locations in Wisconsin.

Woolpert has been awarded a $5.6 million contract to assess, rehabilitate, and reduce sanitary sewer overflows by the DeKalb County Department of Watershed Management in Georgia. This project is being conducted through the Priority Areas Sewer Assessment and Rehabilitation Program and is part of a federal consent decree.

PWN Technologies has been assigned to build the new North Plymouth Water Treatment Works of water utility South West Water in the United Kingdom. The new water treatment plant will replace the existing Crownhill Water Treatment Works. The new advanced water treatment facility uses ion exchange, in-line coagulation and adsorption, and filtration by ceramic membranes. The new facility will be operational in 2018.

A digital collection of key archives related to water policy and environmental history in the western United States is being made available through **Oregon State University's** (Corvallis, Ore.) Libraries and Press. On March 1, Oregon State began hosting the Western Waters Digital Library, which includes archival holdings from 29 participating institutes and libraries. Available resources include classic water literature, legal transcripts, maps, reports, personal papers, water project records, photographs, audio recordings, and videos. The Western Waters Digital Library began as a collaborative regional project created by 12 research libraries from eight western states under the auspices of the Greater Western Library Alliance. Funding for this digital library has been provided by the National Endowment for the Humanities and the Institute of Museum and Library Services.

The Environmental Law Program at the **University of Maryland Francis King Carey School of Law** (College Park) will conduct the legal and policy analysis for a new, $10 million US Department of Agriculture effort focused on how to develop and promote the use of sustainable water in US agriculture. Two professors from the university will be part of a multidisciplinary group of researchers that includes bioscientists, engineers, economists, and public health experts. The Environmental Law team will look first at existing legal and regulatory barriers to producing more sustainable water and recommend new policies.

The **San Elijo Joint Powers Authority** (SEJPA) was awarded the Recycled Water Agency of the Year—Medium Size, from **WateReuse California.** This award recognizes the SEJPA for its demonstrated leadership, creativity, and persistence in developing recycled water as a valuable local water supply. SEJPA is a small wastewater/recycled water agency located in the community of Cardiff-by-the-Sea, Calif. The agency serves the coastal cities of Del Mar, Solana Beach, and Encinitas and can produce 3 mgd of recycled water.

California state regulators have certified the supply of potable water from the **Claude "Bud" Lewis Carlsbad Desalination Plant** as drought-resilient, reducing the regional impacts of emergency water use mandates imposed by the state in June 2015. The **San Diego County Water Authority** has worked closely with the state to ensure that local member agencies will benefit from investments in the nation's largest seawater desalination plant, which opened in December 2015 and produces about 50 mgd of high-quality water.